

Purchasing Contact:
Theresa Anderson, PSO II

E-Mail Address:
theresa.anderson@po.state.ct.us

STATE OF CONNECTICUT

DEPARTMENT OF INFORMATION TECHNOLOGY

CONTRACTS & PURCHASING DIVISION

101 EAST RIVER DRIVE
EAST HARTFORD, CT 06108-3274

Contract Award #

023-A-27-7010-C

Contract Award Date

November 27, 2002

Expiration Date

December 01, 2003

CONTRACT AWARD

IMPORTANT: This is NOT a purchase order. Do NOT produce or ship without an agency purchase order.

COMMODITY CLASS/SUBCLASS & DESCRIPTION: **7000 / 560 Radio Dispatch System (Orbacom)**

FOR:

**Military Department
360 Broad Street
Hartford, CT 06105**

TERM OF CONTRACT: 1-year (with option to extend 1-year)

November 27, 2002 - December 01, 2003

AGENCY REQUISITION NUMBER: **10686**

IN STATE (NON-SB) CONTRACT VALUE	DAS CERTIFIED SMALL BUSINESS CONTRACT VALUE	OUT OF STATE CONTRACT VALUE	TOTAL CONTRACT AWARD VALUE
--	\$68,375.90	--	\$68,375.90

NOTICE TO CONTRACTORS: This notice of award is not an order to ship. The using agency or agencies on whose behalf the contract is made will furnish purchase orders against contracts. Send invoices directly to the using/ordering agency per instructions on purchase order.

NOTE: Dollar amounts listed next to each contractor are possible award amounts, however, they do not reflect any expected purchase amounts (actual or implied). They are for CHRO use only.

NOTICE TO AGENCIES: A complete explanatory report shall be furnished promptly to the Director concerning items delivered and/or services rendered on orders placed against awards listed herein which are found not to comply with the specifications or which are otherwise unsatisfactory from the agency's viewpoint, as well as failure of the contractor to deliver within a reasonable period of time specified. Please issue orders and process invoices promptly.

- ▶ **CASH DISCOUNTS:** Cash discounts, if any, shall be given SPECIAL ATTENTION, but such cash discount shall not be taken unless payment is made within the discount period.
- ▶ **PRICE BASIS:** Unless otherwise noted, prices include delivery and transportation charges fully prepaid f.o.b. agency. No extra charge is to be made for packing or packages.

CONTRACTOR INFORMATION:

Company Name: **Marcus Communications & Electronics, Inc.**

SSN/FEIN # **06-1403574**

Address: **275 New State Road, P.O. Box 1498, Manchester, CT 06045**

Tel. No.: **(860) 646-1839 x 331 / 800-833-7724**

Delivery: **60—90 days A.R.O.**

Contact Person: **Mark Butterfield**

Fax No.: **(860) 649-8492**

Payment Terms: **Net 30 Days**

Contact Person's E-mail Address:

markbutterfield@marcuscompanies.com

Certification Type: **SBE**

(SBE, MBE, WBE or None)

Supply to Political Sub-Divisions: **Yes**

Company Website: www.marcuscompanies.com

APPROVED

Holly Miller-Sullivan

Director of Contract & Purchasing Division

(Original Signature on Document in Procurement Files)

Date Issued: November 27, 2002

STATE OF CONNECTICUT
DOIT – CONTRACTS & PURCHASING DIVISION

Award Number
023-A-27-7010-C

Purchasing Contact:
Theresa Anderson, PSO II

Telephone Number:
(860)622-2542

E-Mail Address:
theresa.anderson@po.state.ct.us

**CONTRACT AWARD
SCHEDULE**

023-A-27-7010-C

CONTRACT AWARD DATE
November 27, 2002 – December 01, 2003

DELIVERY
60—90 days A.R.O.

PAYMENT TERMS Net 30 Days	CASH DISCOUNT -- % -- Days
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Pricing includes all transportation charges FOB State Agency.

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VENDOR NAME
**Marcus Communications
and Electronics, Inc.**

SSN OR FEIN #: **06-1403574**

The Department of Information Technology is issuing this contract award for
Military Department for Orbacom Radio Dispatch System to above named vendor

CONTRACT AWARD TOTAL \$ 68,375.90

(4 subtotals from page 2)

Vendor: Marcus Communications & Electronics, Inc.

Address: 275 New State Road, P.O. Box 1498, Manchester, CT 06045

Vendor Contact: Mark Butterfield

Phone: (860) 646-1839 x 331 Fax: (860) 649-8492 E-mail: markbutterfield@marcuscompanies.com

Representative that will service:

Name: Tim Fedish

Phone: (860) 646-1839 x 311 Fax: (860) 649-8492 E-mail: tim.fedish@marcuscompanies.com

Notes:

1. Bidders must comply with the attached Special Bid/Contract Terms and Conditions, Standard Bid and Contract Terms and Conditions, and Agency Specifications.
2. Quantities listed are estimates only. Quantities purchased may be more or less than the estimates. Options may or may not be ordered depending on the needs of the Military Department. Price to include equipment, installation, transportation, delivery, and warrantee, etc.

All correspondence regarding this Contract Award must be in writing and submitted to:
theresa.anderson@po.state.ct.us

-or-

Attn.: Theresa Anderson, Bid # **023-A-27-7010-C**

DOIT - Contract & Purchasing Division, 101 East River Drive, East Hartford, CT 06108

DESCRIPTION OF COMMODITY AND/OR SERVICES			QTY	UNIT OF MEASURE	UNIT PRICE	TOTAL PRICE
10.		Operator Position Ports – Card for pre-wired card slot and CRT-Based Dispatch Position Console Electronics <i>per specifications</i>	1	each	\$18,000.00	\$18,000.00
11.	LOT	LABOR to install	1	each	\$500.00	\$500.00
			SUBTOTAL 4:			\$18,500.00

DOIT – CONTRACTS & PURCHASING DIVISION
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SPECIAL BID/CONTRACT TERMS AND CONDITIONS

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1. SCOPE

The State is seeking a contractor to provide and install an *Orbacom radio dispatch system* (per Bid Schedule and Specifications) for the Military Department. This will be a **1-year contract** with an option to extend for one additional year.

Optional on-site walkthrough for labor to install in Hartford. Please register by sending an **email** with bidder's name, address, phone number, and names of representative(s) to theresa.anderson@po.state.ct.us no later than **noon, Thursday, September 19, 2002**. Directions and additional instructions will be emailed upon receipt of registration.

The on-site walkthrough will be **at 11:30 a.m. on Tuesday, October 01, 2002** and is not mandatory. Late arrivals will not be admitted. Photo ID will be required.

2. AUTHORIZED DEALER

The Bidder is required to indicate that they are authorized to sell and service the product lines requested. The Bidder must be an authorized representative and the contractor may be asked to provide proof from the manufacturer prior to award or during the term of the contract. Contractors may not subcontract or assign this contract to a third party without prior written authorization from the Agency and the Department of Information Technology.

3. PRICING RATES & PAYMENT TERMS

Prices shall be net, including all costs that the bidder may incur, without exception. The Bidder will ensure that quote includes all ancillary costs (e.g. transportation charges). **Failure to include an applicable cost will be interpreted as that cost being included in the price.**

Quantities listed in the Bid Schedule are estimates only. Actual quantities purchased may be more or less than the estimates listed. The agency reserves the right to purchase additional units/accessories within the contract term.

Payment terms are Net 45 days. The State will make payment within 45 days after acceptance of equipment, and receipt of a properly submitted invoice. ***Bidders may offer discounts for early payments.***

4. DELIVERY & SHIPPING TERMS

Contractors will give their earliest guaranteed delivery time (**A.R.O.**) and be specific (i.e. 14 days A.R.O.) Delivery and Installation may be an important factor in making the award. Equipment shall be delivered in accordance with the instructions contained within the requesting agency's purchase order. Shipping terms are F.O.B. State Agency. Terms listed otherwise are subject to rejection.

5. INSURANCE REQUIREMENTS

The Bidder will carry sufficient insurance to cover the nature of work to be performed, to indemnify and hold the State of Connecticut harmless from any insurable cause whatsoever. Upon Request, the Bidder will furnish a current Certificate of Insurance evidencing General Liability, including products and completed operations coverage, Workers' Compensation and Automobile Liability coverage.

6. WARRANTY

The Bidder will indicate all manufacturers' warranties that apply to the equipment/service being offered. The **minimum warranty is two (2) years for parts & labor**, from the date the equipment is placed into service. Bidders are to stipulate if they offer any additional warranties. Upon request, a copy of the warranty must be made available to the requesting state agency.

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SPECIAL BID/CONTRACT TERMS AND CONDITIONS

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All equipment supplied by the Bidder shall be new and warranted. The Bidder shall be responsible for providing warranty service during the manufacturer's standard warranty period. The awarded contractor will only use authorized replacement Original Equipment Manufacturer (OEM) parts and will not substitute for a manufacturer's installed components. All parts will be new and not refurbished or remanufactured unless prior written approval is obtained from the requesting agency. The awarded contractor must warrantee service and parts against defects in material, workmanship, and title for a minimum warranty of one (1) year, from the date of repair/replacement.

While under warranty, Contractors will ensure 95% uptime availability of all equipment. Contractors will provide—at no charge—a loaner for equipment that cannot be repaired onsite or a replacement for equipment that cannot be fixed. Contractors will be responsible for equipment taken offsite for repair until it is returned in good operating condition. Contractors will have sufficiently trained staff to maintain equipment.

Upon request from the Agency, contractors will provide a report of service completed on equipment. For example: equipment model, serial number, and location; date and time notified; date and time of arrival/departure; description maintenance or repair; list of parts repaired/replaced; operational status.

7. BASIS OF AWARD

An award will be issued to the lowest, responsible, qualified contractors, who are in compliance with the Agency's technical specifications, these Special T & C stated herein, and the Bid/Contract Terms and Conditions. The State reserves the right to make an award per line item, per group of items, or to the total overall low bid, whichever it deems is in its best interest.

8. CANCELLATION

The State reserves the right to cancel any unfulfilled portion of the contract if the Department of Information Technology deems the parts, supplies, or accessories provided by the contractor are unsatisfactory or inconsistent with the bid/contract terms and conditions.

9. CONTRACTOR INFORMATION In the event that the awarded contractor's information changes (i.e. name, address, telephone), it is the contractor's responsibility to notify the *Contracts & Purchasing Division*, of such changes in writing. The State will not be held responsible for payments or purchase orders that are delayed due to additional routing caused by the lack of notification.

10. PRICE INCREASES

Pricing Rates quoted under this contract shall remain firm for a period of one (1) year from effective date of contract award. Thereafter, the awarded contractor may file for a price increase at the end of the year. Changes shall be consistent with and relative to price changes originating with the manufacturer as evidenced by notices or list pricing (parts), or based upon general industry changes (labor). Requests for such increase must be fully and properly documented and include the new pricing medium. Contractors will honor contract pricing on orders issued prior to the effective date of any increase in price.

Contractors must submit a formal request for any price increase to the Department of Information Technology, *Contracts & Purchasing Division*, no later than thirty (30) days prior to the effective price increase date. The increase request shall contain the date the increase takes effect. *No retroactive increase will be allowed.* The State reserves the right to reject any requests deemed excessive.

11. PURCHASE ORDERS & INVOICES

The ordering State Agency (DCF) will issue purchase orders. Questions regarding purchase orders and invoicing should be directed in accordance with the instructions contained in the boilerplate of the purchase order. Payments may be delayed if the State invoice form is not properly completed in accordance with the instructions contained on the purchase order.

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SPECIAL BID/CONTRACT TERMS AND CONDITIONS

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12. LAWS & TAXES

Bidders and the awarded contractor shall comply in every respect with all applicable laws of the Federal Government and/or the State of Connecticut and all terms and conditions of the bid.

Bidders and the awarded contractor will ensure, in good faith, that their participation in this bid process will not raise a question of conflict of interest or a breach of ethics issue under the provisions of the State Ethics Code, specifically §1-84 and §1-85 of the Connecticut General Statutes.

Bidders may not participate in any *ex parte* communications with any of the manufacturers, dealers or other respondents who are responding to this Invitation to Bid. **Bidders may not contact the requesting agency or its employees regarding this ITB**, unless permitted (in writing) by the Director of the Department of Information Technology or her designee.

Bidders and the awarded contractor will be in compliance with all applicable federal, state, and local laws and regulations, including but not limited to Connecticut General Statute sections 4a-60 and 4a-60a on nondiscrimination and affirmative action provisions, as well as the following:

- ▶ Affirmative Action Policy Statement: <http://www.state.ct.us/governor/aapolicy.htm>
- ▶ Sexual Harassment Policy Statement: <http://www.state.ct.us/governor/sexualharasspolicy.htm>
- ▶ Section 16 of P.A. 91-58 nondiscrimination provisions regarding sexual orientation
- ▶ Executive Order Number Three issued by Governor Thomas J. Meskill, promulgated on June 16, 1971, Nondiscrimination Clauses in Contracts:
<http://www.state.ct.us/governor/executiveorders/meskill3.htm>
- ▶ Executive Order Number Seventeen issued by Governor Thomas J. Meskill, promulgated on February 15, 1973, Job Listings with the State Employment Service:
<http://www.state.ct.us/governor/executiveorders/meskill17.htm>
- ▶ Executive Order Number Sixteen—of Governor John G. Rowland—promulgated on August 4, 1999, regarding Violence in the Workplace Prevention Policy. No. 16:
<http://www.state.ct.us/governor/executiveorders/no16.htm>

Purchases made by the State of Connecticut are exempt from the payment of Federal Excise Tax, Transportation Tax, and Connecticut Sales and Use Tax. Upon request, the requesting agency will provide a Federal Excise Tax Exemption Certificate.

SPECIFICATIONS

State of Connecticut Military Department Orbacom Communications Digital Dispatch Console System

Communication console system composed of one 30-Card Central Processor Package configured to provide nine expansion slots for future requirements. Included in the configuration is one single video enhanced CRT-based rack mountable console position electronics mountable on console furniture. It must be voice link compatible.

There will be an **optional on-site walkthrough** in Hartford. Please register by sending an **email** with bidder's name, address, phone number, and names of representative(s) to theresa.anderson@po.state.ct.us no later than **noon, Thursday, September 19, 2002**. Directions and additional instructions will be emailed upon receipt of registration. The optional on-site walkthrough will be at **11:30 a.m. on Tuesday, October 01, 2002**. The walkthrough is not mandatory. Late arrivals will not be admitted. Photo ID will be required.

TDM-150 Communications Console System Overview

The center of the Communications Dispatch Center is the **ORBACOM SYSTEMS TDM-150** Communications Control Console. The **TDM-150** is a **DIGITAL** system, which utilizes Time-Division-Multiplex for the data bus. The **TDM-150** continually does self-diagnostics, reports any errors, and also begins to **"SELF-HEAL"** itself. This technology is used to ensure that the system stays in operation, even during component failure.

The system components include a Central Processing Package, and required Operator Positions. The overall system will integrate and control the following:

- Radio Interface, Auxiliary Control, Control doors, lights, fuel pumps, etc.
- Public Address Control, Intercom capabilities.
- Analog PAGING, with channel steering, BOTH Single Button and Keypad paging of ALL known formats.
- Computer Aided Dispatch (CAD) Interface so that the GENISIS CAD & other external CAD systems can control most radio functions
- Telephone Interface (integrated operation for analog telephone lines).
- Required Positions
- Platform for Full Seamless Integration I.E. Computer Aided Dispatch,
- E911 and Records Management Packages

All of these features are available by installing CARD(s) in the CPP and configuring the software. The entire system includes FULL DIAGNOSTICS and PROGRAMMING CAPABILITY, both locally, and remotely via modem, for ALL of the operating CPP parameters. **LIFETIME SYSTEM SOFTWARE** updates that affect core operations. Unlike other products, ORBACOM Systems does not charge an annual license or maintenance fee for the TDM-150 CPP operating software.

System Description

New equipment that meets or exceeds EIA, FCC, NEMA, IEEE, and all domestic U.S. telephone company specifications regarding specific audio levels and DC control voltages on the line at the time of this proposal to form a Communications Control Center. All equipment should meet or exceed the bid specifications. All equipment in which microprocessors or switching power supplies are used should have undergone comprehensive Electromagnetic Emissions testing and is certified as compliant with Part 15, Subpart "J" of the FCC rules for Class "A" computing devices. All personal computers supplied as part of the system should be certified as compliant with Part 15, Subpart "J" of the FCC rules for Class "B" computing devices.

The console design is based on distributed microprocessor technology. Each console position has its own dedicated microprocessor controller, as does each radio and control interface in the system. All system audio is digitally encoded using Time Division Multiplexing and Digital Signal Processing techniques. The TDM-150 system continuously employs digital and audio diagnostics. Multiple redundant microprocessors are incorporated throughout the system and automatically perform self-healing procedures in the event of component failures to restore proper operation.

SPECIFICATIONS

The system has been engineered to enhance the dispatcher's capabilities in performing resource management tasks, to minimize the effort and concentration required for efficient radio control, and to provide ease of maintenance. Dedicated control modules or graphical presentations representing each base station/repeater channel and auxiliary function group are utilized at each console. Channels, talk groups, and individual IDs are referred to by actual names rather than by numbers. Functions and indicators (LED in conventional configurations or changes of color in CRT configurations) of control modules are color-coded. All primary dispatch functions use single key stock operation. The entire system is totally modular in design and construction to allow for ease of expansion to meet future requirements. All electronic circuitry used throughout the system are solid state design with the exception of the video display, relays for external interfaces and front panel switches. All major circuit boards are plug-in modular design utilizing, where applicable, polarized edge finger contacts to prevent improper insertion. All circuit boards are single or double layer design incorporating through-hole mounting of all components.

The **TDM-150** design is capable of expansion up to 120 audio paths by means of a universal digital matrix architecture, which allows any patch to be a dispatch position, a radio channel, or a phone line.

The integrated system is comprised of a shared common **30-Card Central Processor Package** in an enclosed cabinet 60" H x 22" W x 26" D configured to provide:

- 120 VAC 60 Hz power supply and reserve power supply in a cold standby mode (converts 120 VAC main power to 12 VDC utilized by the system);
- UPS battery backup system that will provide a minimum of one (1) hour battery back up prior to an orderly shut down;
- Central system controller and a redundant central system controller;
- Full system On-Line programming capability;
- Maintenance diagnostic logging printer and stand;
- Maintenance audio test panel with hand held microphone and speaker with volume control;
- Maintenance /programming software for customer provided IBM compatible PC or Laptop to perform diagnostics and reprogramming of system at the central processor;
- Remote diagnostic/programming 2400 baud modem;
- Centralized system paging/signaling controller and hot standby controller;
- System equipped for Windows NT 2000 operating system consoles,
- Four auxiliary function interfaces with a total of sixty-four (64) 5 amp relays for the door controls, light controls, future requirement controls, and site select relay closure controls;
- Two quad receive interfaces providing up to four (4) audio interfaces per controller for additional receive only audio channels;
- Nine base station/control station interfaces for the required radio channels. These interfaces are configured with tone remote keying, DC remote keying, E & M signaling, line operator busy indication(s), and 2-wire/ 4-wire audio capabilities as required. One (1) interface is configured for 2-site select. Five (5) interfaces are configured for 5-site select. Three (3) interfaces are configured for 6-site select.
- One operator position port is provided equipped with On-Line programming capabilities;
- Manuals (Installation, Service and Maintenance)

The **TDM Operator Position Port** (TDM-OPP) provides the necessary Central Processor Package hardware, system software media and software licensing to support **one (1)** T5 Operator Position Console. One (1) TDM-OPP is required for *each* Operator Position Console to be activated within the TDM System. The TDM-OPP Operator Position Port includes:

- (1) Port Interface Controller (PIC) and PIC line terminator cards
- (1) CD-ROM containing **The Resource** Operator Position software application for Windows 2000 / Windows NT v4.0 (See the following page for more information.)
- (1) Operating Manual for The Resource

SPECIFICATIONS

- (1) Perpetual, seat license, issued to the original system owner, for use of The Resource and all other system software and firmware necessary to operate *one (1)* Operator Position Console.
- One (1) pre-wired position interface card slot is provided in the central processor for future expansion requirements;
- One (1) installation/service/maintenance/programming manual and customer "As-Built" documentation;
- Nine (9) unassigned expansion slots in the Central Processor for future expansion requirements.
- One (1) single video enhanced CRT-Based (tower design) rack mountable operational dispatch position electronics mounted on customer furnished console furniture is provided in the configuration.

Each CRT-Based Dispatch Position Console Electronics contains:

- 21" SVGA .28 DP, NI, Near-Flat Screen color monitor with built-in surface acoustic wave touchscreen;
- IBM 1.8 GHz/133 MHz - Pentium IV mini tower design CPU with 128 MB SYNC DRAM, 256 KB L2 Cache, 1.44 Mb 3.5" FDD, 40.0 GB HDD, PCI bus SVGA Video Card with 16 MB VRAM, 48 x CDROM, PCI 16 bit Sound Card, Windows 2000/NT™ operating system and license are included, two (2) serial ports, one PS2 Mouse port, one parallel port, and USB ports;
- The IBM PC includes a 3-year on-site repair warranty. The standard on-site warranty provides 9 AM - 5 PM, next business day service. As an authorized dealer you will work with Orbacom customer service, so we will have a single point of contact for all system components.
- UPS battery backup system rated to provide a minimum of fifteen (15) minutes of battery backup power prior to an orderly shutdown;
- A rack mountable control interface panel which contains two (2) speakers (Select & Unselect) with amplifiers and adjustable individual volume controls, keypad for paging and diagnostics features access, and control switches;
- Single heavy duty design foot switch;
- Hum resistant panel Electret microphone with a 17" gooseneck;
- One (1) headset jack assembly configured for radio and telephone with extended TELCO interfaces;
- Up to four (4) paging/signaling internal encoder formats selectable from seven (7) available encoder formats; 1+1, 2+2, single tone, DTMF, 1500 HZ dial, 2805 HZ dial, 5/6 tone.
- Up to 255 stack-then-send single button paging capability;
- 8-level channel crosspatch capability;
- Up to three (3) alter tone capability selectable from seven (7) standard available tones - steady (1004 HZ or 600 HZ or 1200 HZ); warble (1500/900 HZ); pulsing 2 P.P.S. (1004 HZ or 600 HZ); 3-pulse (1004 HZ);
- Simulcast instant PTT capability;
- Two-key safety interlock capability for paging, alarm, and auxiliary function keys;
- Local PTT relay contact output for controlling external audio devices and recall recorder audio;
- On-line manual simulcast select capability;
- Supervisory control included on one (1) position;
- Control capability for nine (9) base stations / control stations. These controls are equipped with supervisory hard takeover control capability on an as-required, as-needed basis;
- Control capability for up to sixty-four (64) auxiliary function keys for door controls, light control, security cameras control, and site select requirements. These controls are equipped with two-key safety interlock control capability, momentary or alternate action key control capability on an as-required, as-need basis;
- Control capability for up to 255 stack-then-send single button paging keys;
- Console is equipped with a trackball pointing device and a built-in surface acoustic wave touchscreen control capability;
- One 100 foot 6-pair interconnect cable and # 6 grounding cable;
- Resource operator's, Installation, Services, and Maintenance Manuals

SPECIFICATIONS

THE RESOURCE - Operator Application

The Resource provides the operator interface for an Orbacom TDM Operator Position. Screens are organized in user-definable Categories. Typical Categories include Radio, Auxiliary, Paging and Phone. The program supports an unlimited number of Categories, and Screens within a Category. The Resource includes such on-screen functions as single-key access to PA systems, Two-Key Safety Interlock to prevent accidental activation of single button pages, and Global Priority Marker to identify a radio channel as priority-only. The Resource's object oriented design allows users to centralize the resources of frequently used functions and arrange them on one dispatch screen for convenient access.

Radio Screens are the most frequently used of the Resource screens. These screens contain Radio Modules and other commonly used features. However, any type of module can be placed on any screen for operator convenience. Paging Screens contain modules for generating radio or telephone paging tones. Auxiliary Screens are commonly used for non-radio functions, such as controlling door latches, cameras and alarms. They may also be used for general indications, such as a lighted panel to indicate personnel availability status. Auxiliary Screens typically contain Auxiliary and Voter Modules, but any type of module can be placed on any screen for operator convenience.

Radio Control Modules appear on radio screens, or, if desired, on another user-specified screen. System functions and paging controls are accomplished via Modules. Module types include Radio, Auxiliary, Paging, Recall Recorder and Paging Intercom. Any type of module can be placed on any screen, and the background, title, category and button appearance of a module can be custom configured by the user. Unique screen configurations can be created for each dispatcher, or for each shift. Module sizes include Large, Medium, Small and Tiny. In addition, Module Properties, such as Background colors and styles, are user-selectable. Module sizes are user-changeable on screen. The Large module is convenient for having all control functions displayed continuously. However, when screen space is an issue, smaller radio control modules may be used to fit the desired number of modules on a screen. When a smaller module image is displayed, in most cases there will be other representations of the model hidden from view, which control the lesser used functions of the channel.

The Resource also features Grids and Queues. Grids are a user-definable combination of one or more keys from various modules in the system. For example, an operator may have a grid with transmit buttons for several radio modules, as well as function buttons from auxiliary modules. Arranging these buttons in a grid saves time and screen space. Grids may appear on the Resource List. Queues allow the dispatcher to log the calls in through trunked or vehicle ID radio channels. They display the level of priority, time, unit ID, module #, tag # and group ID for each call.

The Resource List is always on the screen, regardless of the screen displayed. Every module is the system in found on the Resource List as a condensed one-line entry for convenient access.

Additional detailed specifications can be located on the manufacturer's website at: www.orbacom.com

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**WARRANTY:** The Contractor shall also be responsible for providing warranty service during the manufacturer's standard warranty period. **A minimum warranty of two (2) years is mandatory is required for parts and labor.** Part numbers and applicable Serial numbers of system and equipment will be listed on the packing slip and invoice.

**SERVICE MANUALS:** Upon request, *additional* comprehensive installation and service manuals shall be provided. They shall be complete in every detail for the equipment actually supplied and will include at least the following:

- |                                                          |                                                                         |
|----------------------------------------------------------|-------------------------------------------------------------------------|
| -basic theory of operation of the circuitry used         | -parts listing that gives the manufacturer's ordering numbers for parts |
| -troubleshooting charts for determining circuit failures | -pathfinder diagrams showing printed circuit layouts and locations      |
| -tuning and alignment procedures                         | -schematic diagrams showing normal voltage measurements                 |
| Troubleshooting                                          | Installation, Service, and Maintenance                                  |

**SPECIFICATIONS**

**Option 1 - Systemwide Spare Cards** (for the Central Processor Package to provide maintenance and system backup)

- 1 – TSP-AUX - Spare Auxiliary Function Interface Card.
- 1 – TSP-LIC - Spare Line (Base Station/Control Station/ Telephone Patch) Interface Card.
- 1 –TSP-PIC - Spare Position Interface Card.
- 1 – TSP-QRC - Spare Quad Receive-only Interface Card.
- 2 – 313DS3696 - I.C. – Fuse – Surge Suppression DS3696

**Option 2 - Services**

Operator's Training - On-Site - 1 Day

**Option 3 – Additional Dispatch Position** (to add an additional position to avoid a potential single point failure.)

**1 Operator Position Ports – Card for pre-wired card slot**

**1 CRT-Based Dispatch Position Console Electronics with:**

- 15-minute UPS battery backup,
- Control interface processor – Rack mount Version,
- Standard console features, Single heavy duty footswitch,
- Equipped with Windows NT/2000 Workstation Operating system with workstation license,
- Panel mounted Electret microphone with a 17" gooseneck
- One (1) headset jack assembly with electronic 1A2 TELCO interface,
- Manuals (1 –Resource Operator) & Installation Materials
- IBM 1.8 GHz/133 MHz - Pentium IV- CPU with 128 MB SYNC DRAM, 256 KB L2 Cache, 1.44 MB 3.5" FDD,
- 40.0 GB HDD, PCI bus SVGA Video Card with 16 MB VRAM, PCI 16 bit Sound Card, 48 x CD ROM, 2 serial ports, PS2 Mouse port, 1 parallel port, USB posts
- 21" SVGA .28 DP NI near-flat screen color monitor with built-in surface acoustic wave touchscreen
- Trackball pointing device
- Parts & Software Warranty included

**SPECIFICATIONS**

**Central Processor Package**

|   |             |                                              |
|---|-------------|----------------------------------------------|
| 1 | TDM-1509230 | Central Processor 30-Card, 60" cabinet       |
| 4 | TDM-AUX     | Auxiliary function interface controller      |
| 4 | TDM-AUX/E8  | 8 Relay expansion for auxiliary controller   |
| 2 | TDM-QRC     | 4 Channel Receive-Only controller            |
| 9 | TDM-LIC     | T/R Line (base station) interface controller |
| 9 | TDM-OP301   | Tone remote keying                           |
| 9 | TDM-OP305   | Tone line operated busy LED                  |
| 9 | TDM-OP331   | 4-Wire receive audio                         |
| 1 | TDM-OP335   | 4-site selection relays                      |
| 8 | TDM-OP336   | 8-site selection I/O wiring                  |
| 1 | TDM-PIC.LT  | Prewire future PIC card slot                 |
| 1 | TDM-OP207   | Technician audio test panel                  |
| 1 | TDM-OP208PC | Maintenance / Programming software - IBM     |

**Position Electronics**

|   |              |                                                                   |
|---|--------------|-------------------------------------------------------------------|
| 1 | TDM-OPP      | Operator Position Port                                            |
| 1 | T5-9400R1    | Rackmount CIP - no PC or monitor- WIN 2000 OP only                |
| 1 | T5-401SH     | Single heavy duty footswitch - PTT only                           |
| 1 | T5-402       | Panel microphone - ELECTRET                                       |
| 1 | T5-406       | Headset jack interface                                            |
| 1 | T5-411       | 1+1 keypad paging format                                          |
| 1 | T5-414       | DTMF keypad signaling format                                      |
| 1 | T5-418       | Stack-then-send paging control                                    |
| 1 | T5-419       | Single button paging assignment                                   |
| 1 | T5-420       | Eight-level channel crosspatch                                    |
| 1 | T5-421       | 1004 HZ steady alert tone                                         |
| 1 | T5-423       | 1004 HZ pulsing alert tone - 2 PPS                                |
| 1 | T5-425       | 1500/900 HZ warble alert tone                                     |
| 2 | T5-430       | Simulcast instant PTT                                             |
| 1 | T5-433       | Two-key safety interlock                                          |
| 1 | T5-438       | Local PTT relay contact output                                    |
| 1 | T5-441       | First level supervisory control                                   |
| 1 | T5-507       | Supervisory hard takeover                                         |
| 9 | T5-508       | Remote control function                                           |
| 1 | T5-610B      | Individual key / momentary action                                 |
| 1 | T5-611B      | Individual key / alternate action                                 |
| 1 | TDM-OP702/10 | 6 pr console / CPP cable w/#6 ground cable - 100 feet             |
| 1 | T5-9400PC    | Mini-tower OSI Workstation PC                                     |
| 1 | T5-21TCRT    | 21" Near-Flat Screen CRT Monitor - w/ built-in SAW<br>Touchscreen |
| 1 | T5-490       | Equip console for trackball control                               |